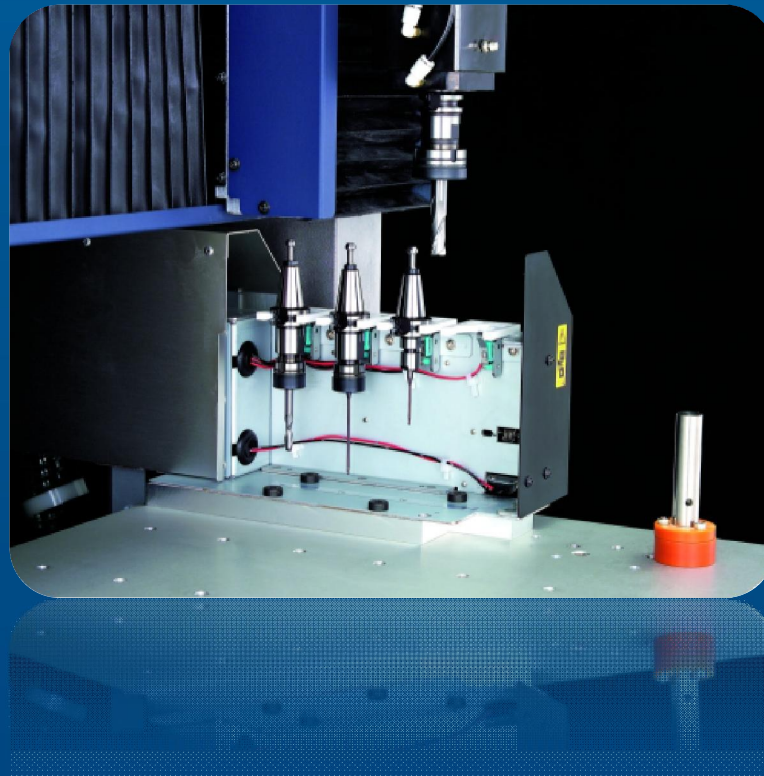


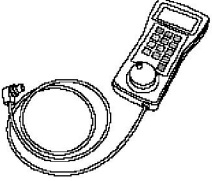
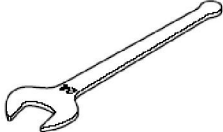
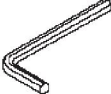
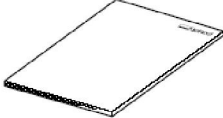
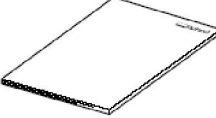
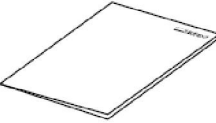
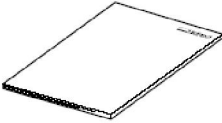


MDX-540 Setup



What's Included

v All items included with MDX-540

			
Handy panel	Power cord	Tool sensor	Sensor cable
			
Nut ^⑦	Nut wrench ^⑦	Wrench (24 mm) ^⑦	Hexagonal wrench (4 mm)
			
Roland Software Package CD-ROM	SRP Player CD-ROM	User's Manual (this manual)	Roland Software Package Software Guide
			
SRP Player Installation and Setup Guide	NC Code Reference Manual		

NOTES:

- Please be familiar with the names of all the accessories listed here.



MDX-540 Driver Install

V Driver Install

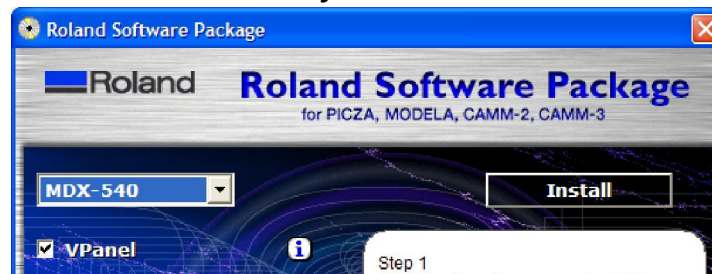
- Turn on machine
- Turn on computer
- Install USB cable to both machine and computer
- Place yellow drivers CD into computer
 - Labeled RSP009
- Follow windows based instructions for completing install.



NOTES:

V Vpanel Install:

- Install Vpanel from same yellow drivers CD

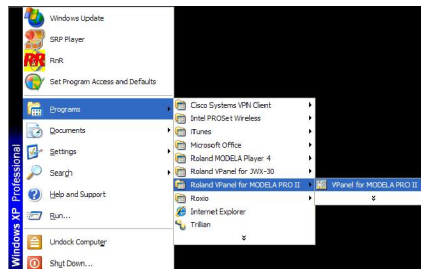




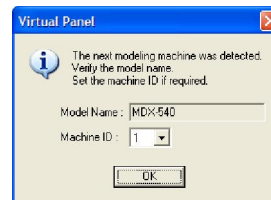
MDX-540 Vpanel

V Vpanel Use:

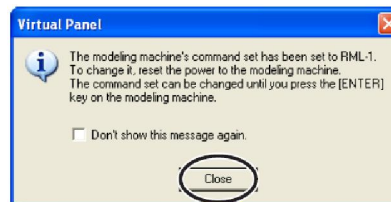
- Select Roland Vpanel for Modela Pro II from the Start menu.



- Click OK button.



- Click close when completed.

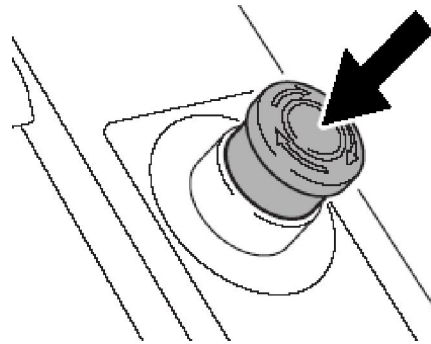


NOTES:

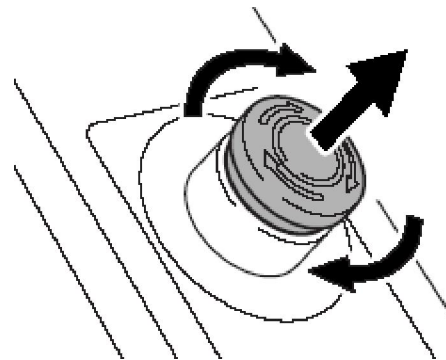


MDX-540 Safety

- ▼ Press Emergency Stop button to immediately stop cutting and abort cutting job.



- ▼ To remove machine from E-Stop condition, turn off machine and twist button.
- ▼ Follow directions for starting machine.



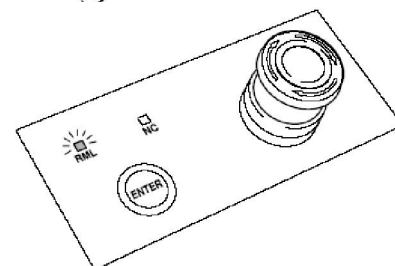
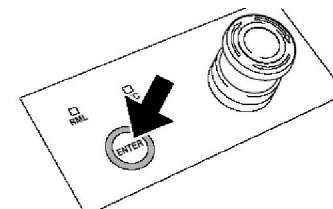
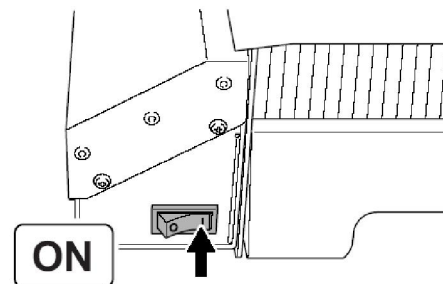
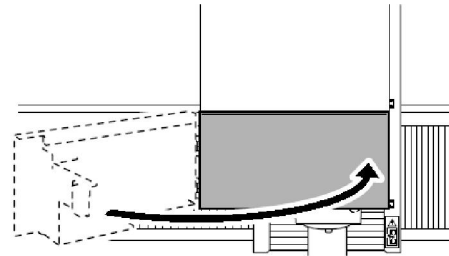
NOTES:



MDX-540 Power On

V Start up sequence

- Close spindle cover.
- Turn on main power.
- Press Enter when instructed and when machine area is clear.
- After machine has stopped the origin process, RML light will be on.



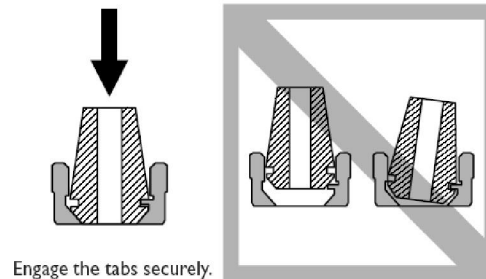
NOTES:

- Please see user's manual for starting machine in NC mode.
- Page 47
- How to Select the Command Mode

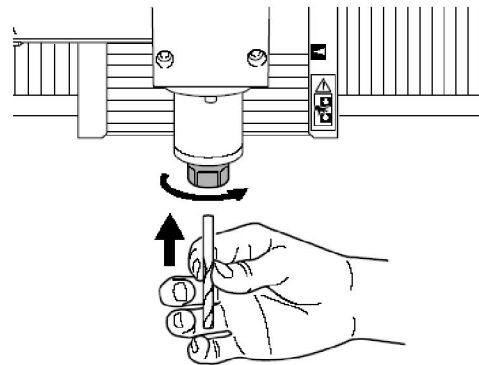


Setup Basics – Installing Tool

- Insert collet into nut
 - Make sure its well seated by pressing collet down into the nut.



- Lightly tighten nut to hold tool in place

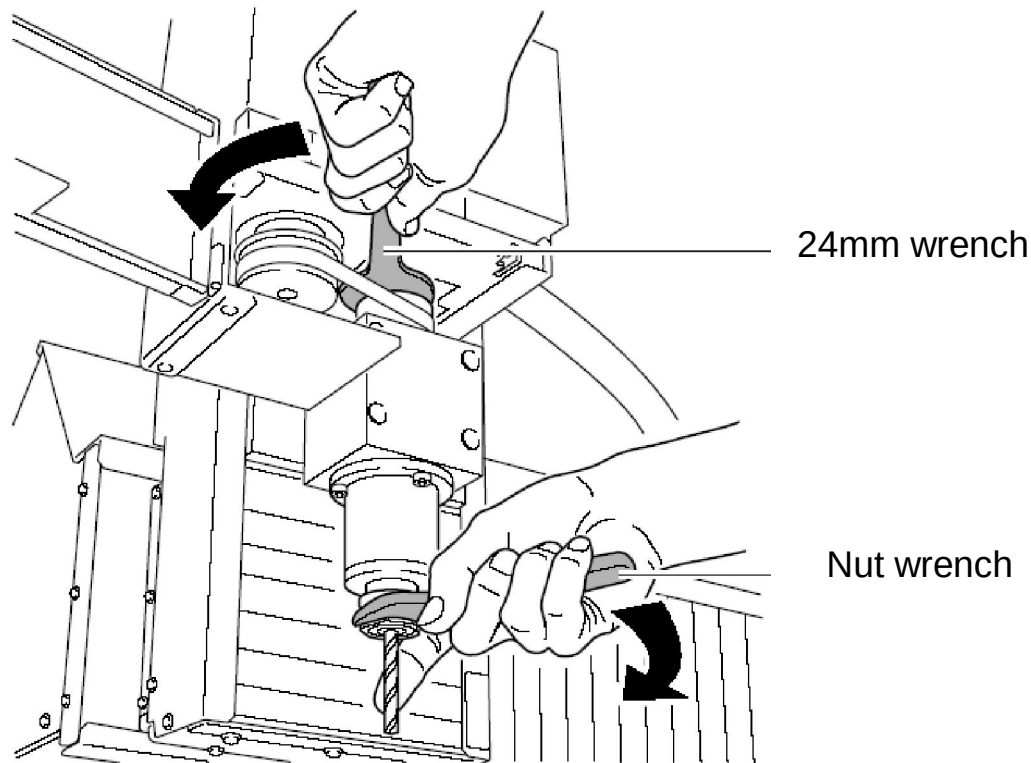


NOTES:



Setup Basics – Installing Tool

- Support tool with finger tip as you tighten tool using 24mm & nut wrench.



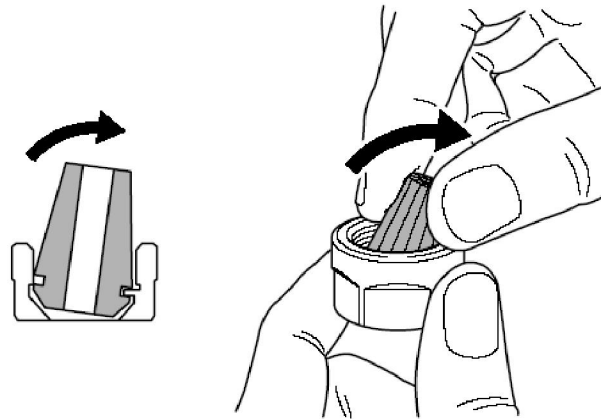
NOTES:

- If tool is not supported, tool could fall and break.



Setup Basics – Installing Tool

- To remove collet, remove nut and tip collet sideways to loosen.



NOTES:



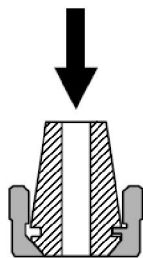
Setup Basics – Installing Tool

V Automatic Tool Changer Tool Installation

- If you have an automatic tool changer, place tool holder in white tool holder base.
- Remove nut from tool holder.



- Place collet in nut and push down to secure.



NOTES:



Setup Basics – Installing Tool

- Place nut on tool holder and screw on but do not tighten.
- Place tool in collet.
- Tighten tool holder nut using included spanner wrench.

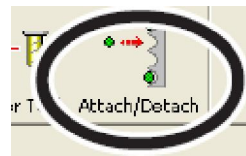


NOTES:

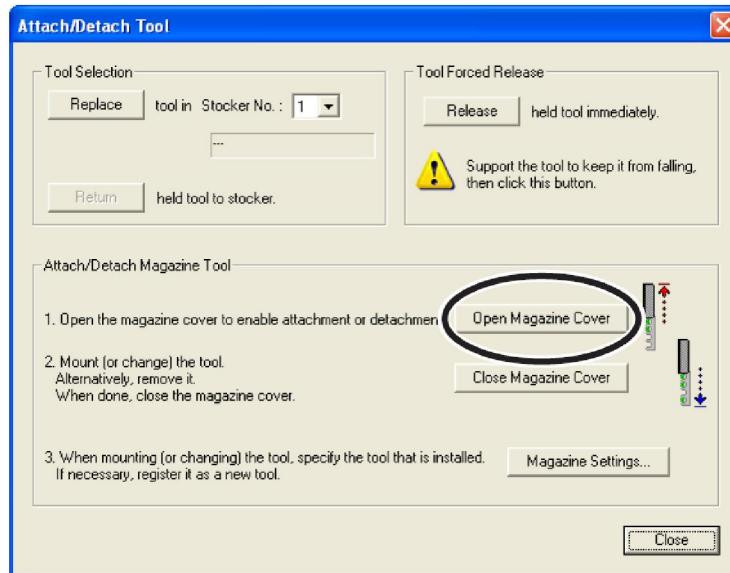


ATC Tool Loading

- ✓ Installing tools in the automatic tool changer.
 - Go to the VPanel and click on the Attach/Detach button.



- In the Attach/Detach screen, click on the Open Magazine Cover button to open the magazine cover.



NOTES:

- If using the Handy Panel, press the MENU key until the ATC TOOL MENU appears.



```
<ATC TOOL MENU>
>TOOL1  RETURN
TOOL2  Mag. cover
TOOL3  Meas. length
TOOL4  Force release
```

[Return to main]

- Move the Handy Panel Jog Wheel until Mag. cover is selected.

> Mag. cover

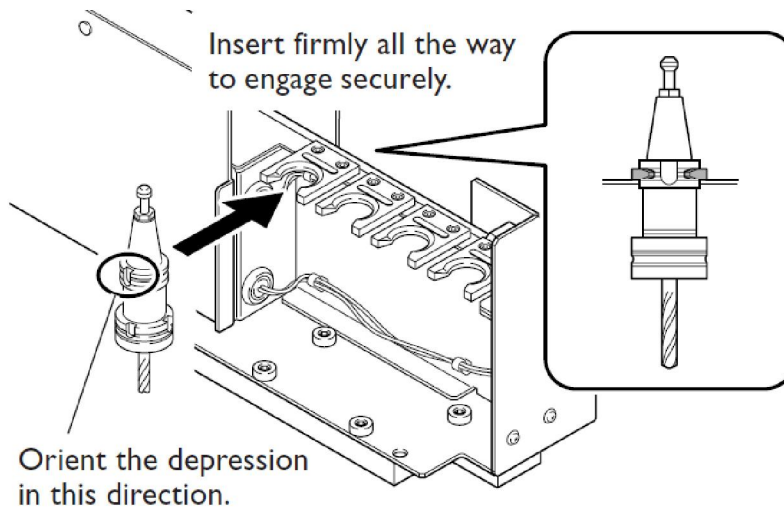
- Press ENTER/PAUSE to open or close the cover.





ATC Tool Loading

- ✓ Installing tools in the automatic tool changer.
 - With the magazine open, place tool holders in the slots.



- With the tool or tools securely in the magazine, click on the Close Magazine Cover button.

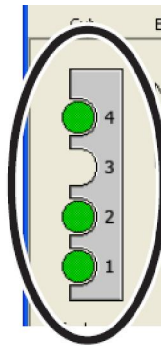


NOTES:

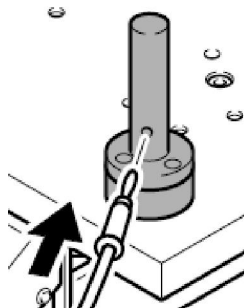


ATC Tool Loading

- The Vpanel will indicate which tool magazine location is holding a tool.



- To measure the length of the tools, click on Magazine, then click Measure All to measure the length of all tools or the Measure button to measure individual tools.
 - Make sure the Z0 sensor cable is connected to the Z0 sensor before starting this process.



NOTES:

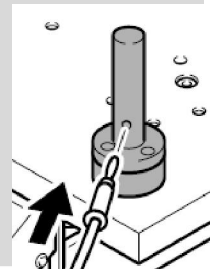
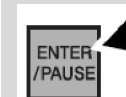
- If using the Handy Panel, press the MENU key until the ATC TOOL MENU appears.

```
<ATC TOOL MENU>
>TOOL1  RETURN
TOOL2   Mag. cover
TOOL3   Meas. length
TOOL4   Force release
[Return to main]
```

- Select Meas. length.

> Meas. length

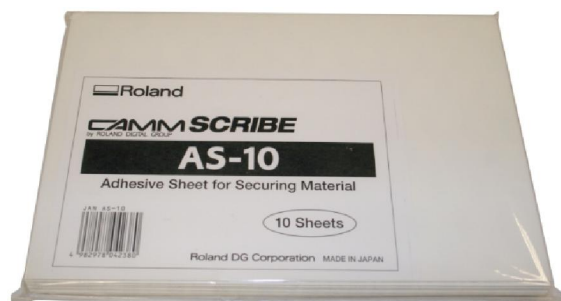
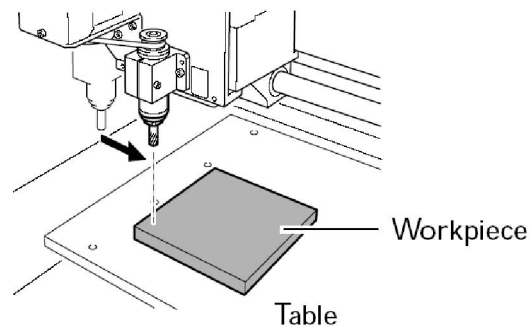
- Pressing Enter will measure the length of all tools available. Make sure the Z0 cable is connected to the Z0 sensor before measuring.





MDX-540 Adding Material

- ✓ Fix material to MDX-540 table using either Roland AS-10 sheets or heavy traffic double sided carpet tape.



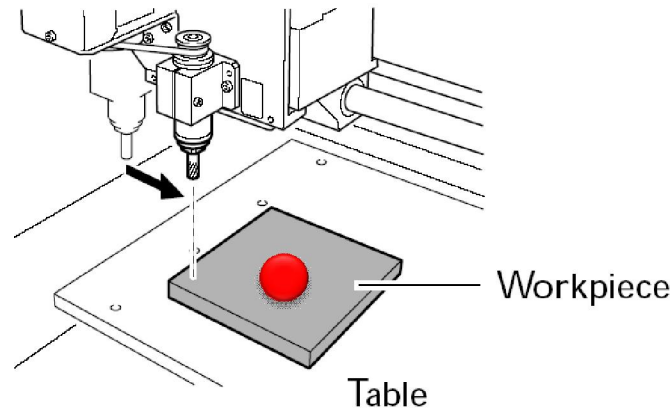
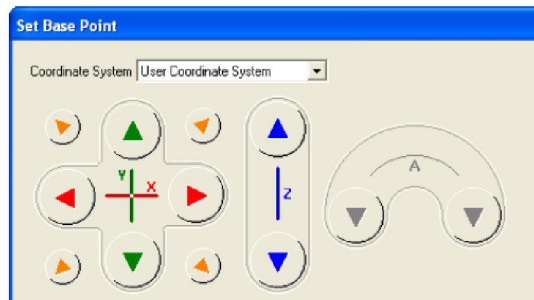
NOTES:

- Double sided carpet tape can be purchased at local hardware store such as Home Depot and Ace Hardware.
 - Best tape is fabric based tape not foam or fiberglass type tape.
 - For milling plastics and tooling board, double sided tape will hold objects in place.
 - For milling tougher materials such as aluminum and brass, better fixturing is required.
- ***Please see resources for more information***

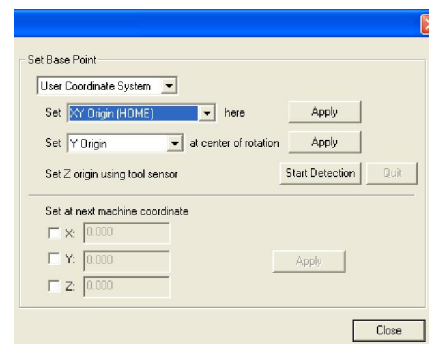


MDX-540 Setting Origin Points

- ✓ Move tool to origin point selected in software.
 - Usually the center of the material. (Red dot)
 - **Make sure your coordinate system is set to User Coordinate.**

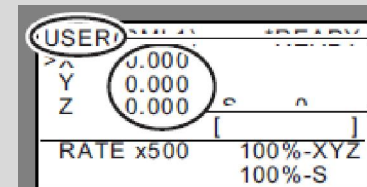


- Set origin point at this location using Vpanel and selecting “Set XY Origin (Home) here”.
- Click Apply
- Click Close to close window.



NOTES:

- If using the Handy Panel, press COORD SYSTEM button until USER is displayed on the screen.



- Move the tool to the desired location. (Red dot)
- Press X button until the arrow is on X.



- Press and hold the ORIGIN button until X changes to 0.00.

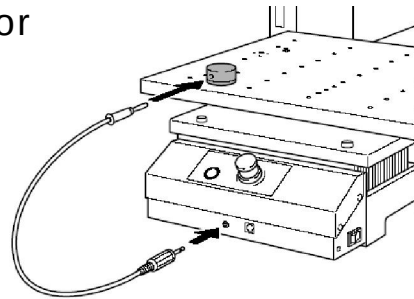


- Press Y button until the arrow is on Y.
- Press and hold the ORIGIN button until Y changes to 0.00.

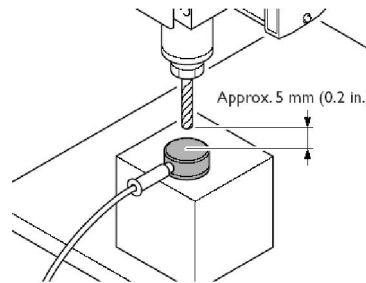


MDX-540 Setting Origin Points

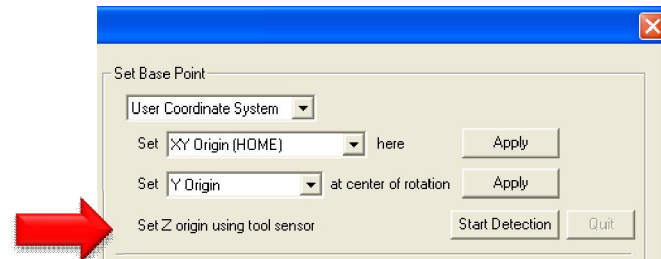
- ✓ Place Z0 sensor above material, connect sensor cable to the sensor and Z0 connector



- ✓ Move tool so that it is right above the sensor about .200" - .250"



- ✓ Click on "Set Z origin using tool sensor" and click on Start Detection.



NOTES:

- New MDX-540's have a sensor connector more securely connected to the machine.

- If using the Handy Panel, press the Z0 SENSE button until it beeps.



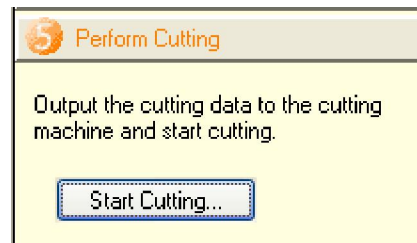
- Make sure the coord. system says u



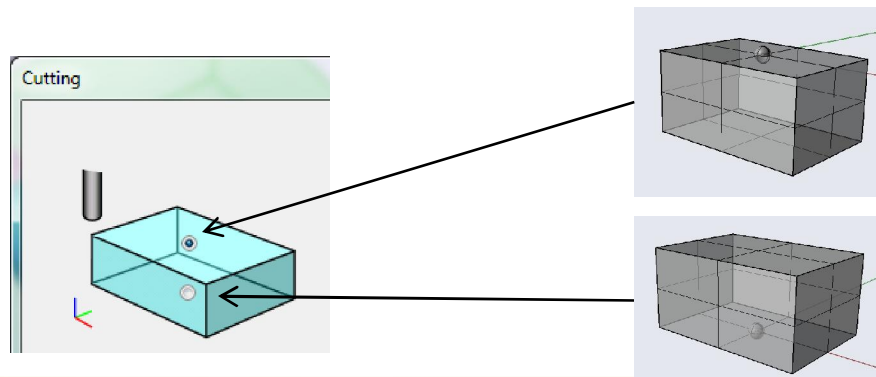


MDX-540 Setting Origin Points

- ✓ After tool touches sensor, remove sensor from cutting area.
- ✓ Machine is now set up and ready to receive commands from SRP Player or other CAM software.
 - Press “Start Cutting” in SRP Player to start machine.



- The software will ask you to select the origin point. You can select the XYZ origin in the middle top portion of the part or Middle bottom portion of the part.

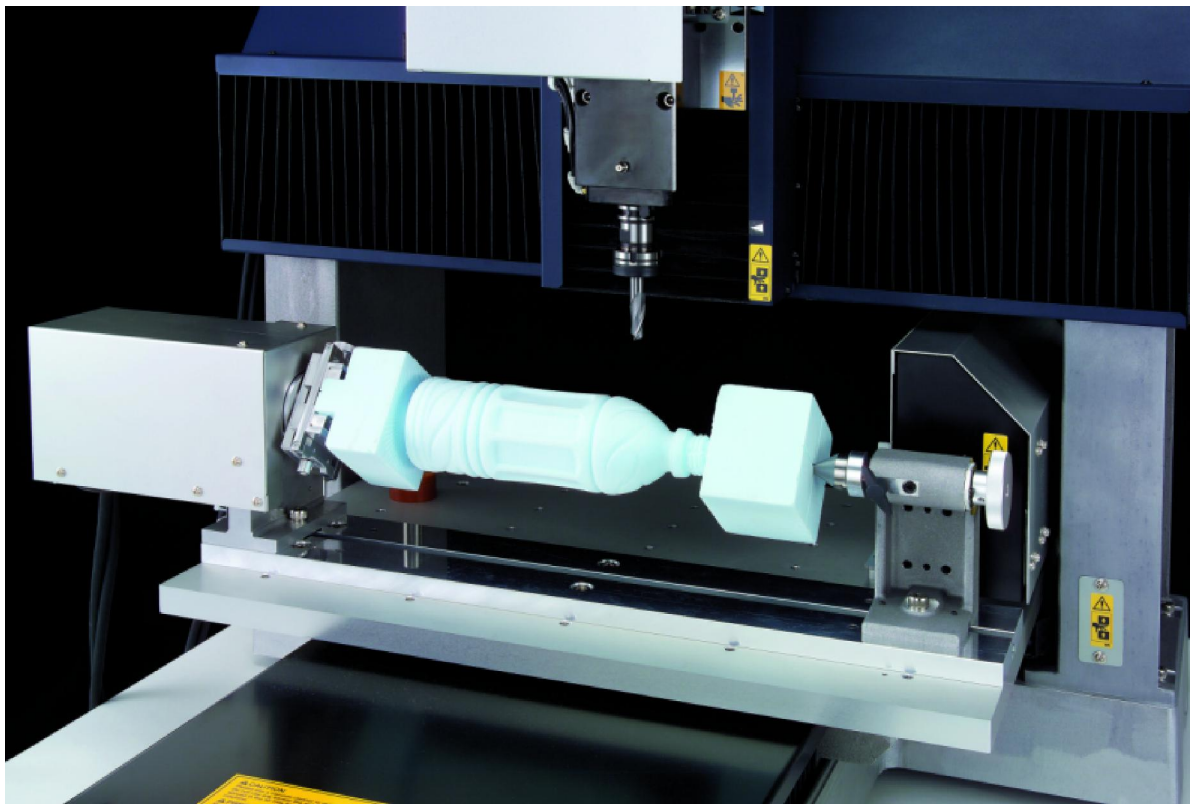


NOTES:



ZCL-540 Rotary Axis

- ✓ Allows you to cut objects and rotate them automatically.
 - Large cutting area.
 - 7.0" Diameter by 14.6" Length

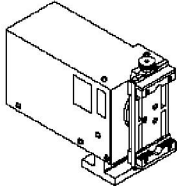
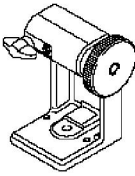
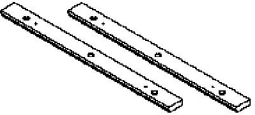
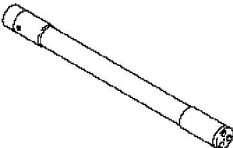
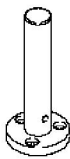
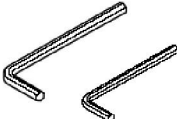
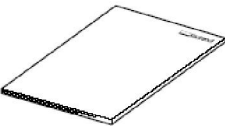


NOTES:



What's Included

v All items included with optional ZCL-540.

			
Drive unit	Tailstock	Base plates x2 ^(*)	Live center
			
Center drill	Y-origin sensor	Z-origin sensor	Spacer ^(*)
			
Origin-detection pin (diameter 6 mm)	Cap screws (M8 x 20 mm) x8 ^(*)	Cap screws (M4 x 30 mm) x3 ^(*)	Cap screws (M4 x 15 mm) x3 ^(*)
			
T-slot nuts x2	Hexagonal wrenches (6 mm, 3 mm)	Retaining band	User's Manual (this manual)

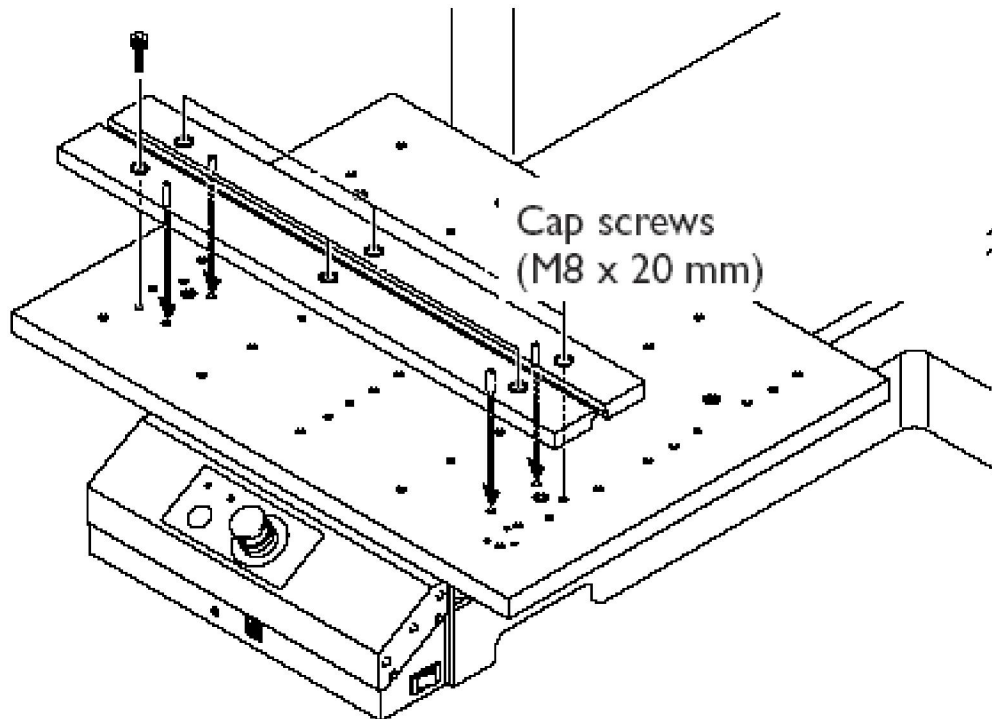
NOTES:

- Please be familiar with the names of all the accessories listed here.



ZCL-540 Setup

- ✓ Install base plates to table using provided screws.
 - Do not install if you have the T-Slot Table.



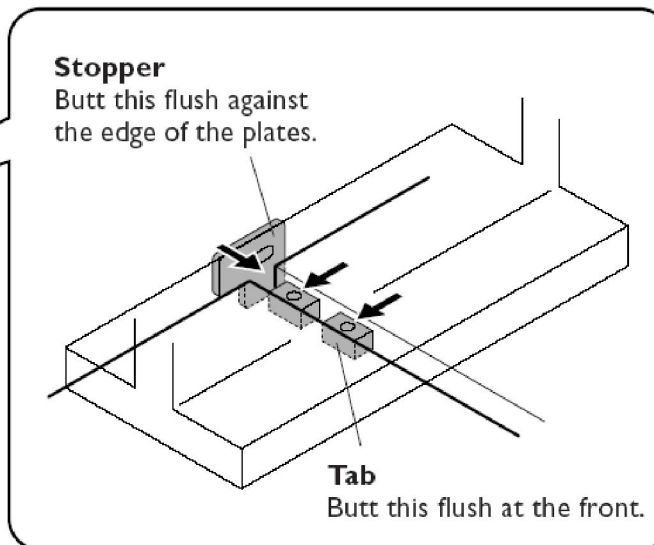
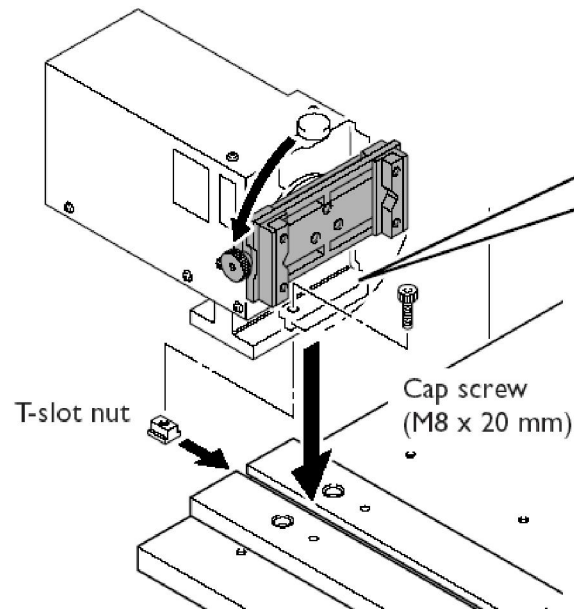
NOTES:

- Make sure machine is switched off before installing ZCL-540 rotary axis unit.
- Disconnect the power cord.
- Plates not used with the T-Slot table. All other instructions will be the same unless noted.



ZCL-540 Setup

- ✓ Gently turn clamp side ways and install on base plates.
 - Ensure stopper is flush against table edge.

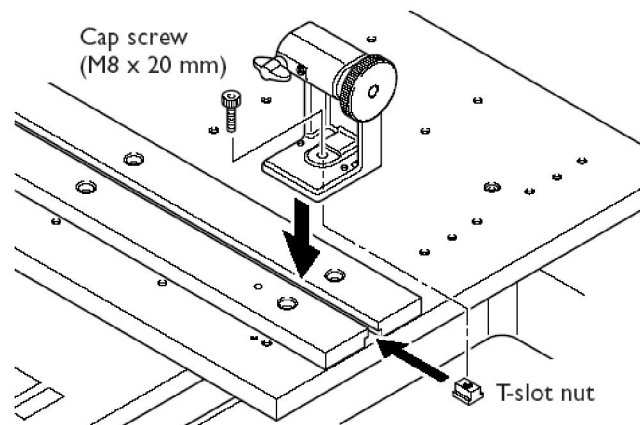


NOTES:



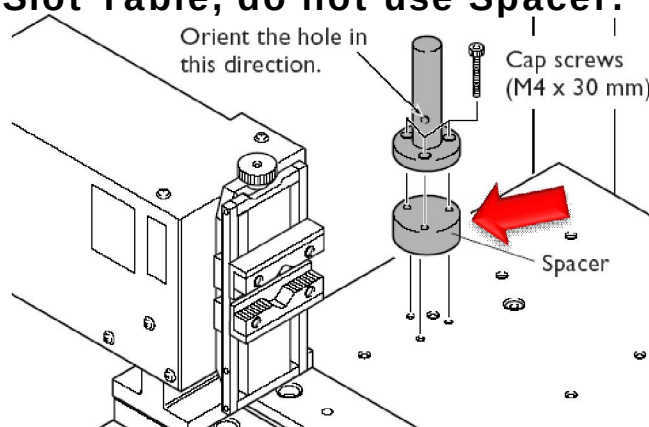
ZCL-540 Setup

- ✓ Install live center as shown.



- ✓ Next install Z 0 sensor.

- If using T-Slot Table, do not use Spacer.

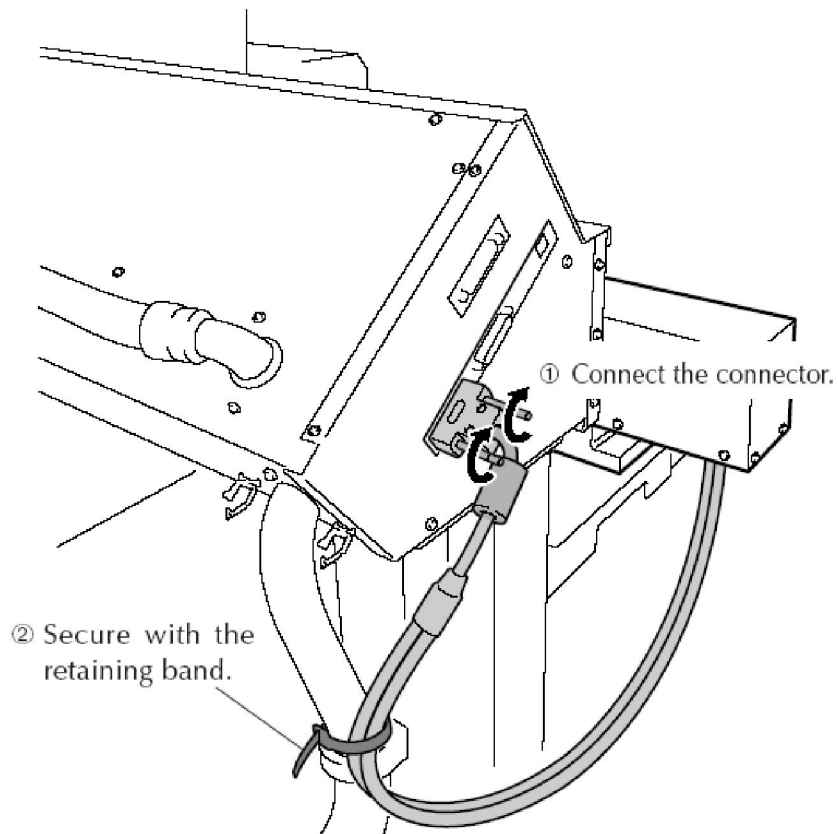


NOTES:



ZCL-540 Setup

- ✓ Connect connector to correct location on machine.
- ✓ Secure with provided reusable strap.

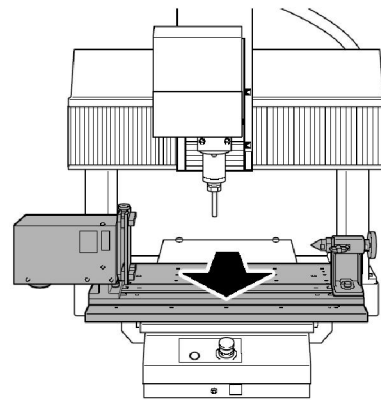


NOTES:



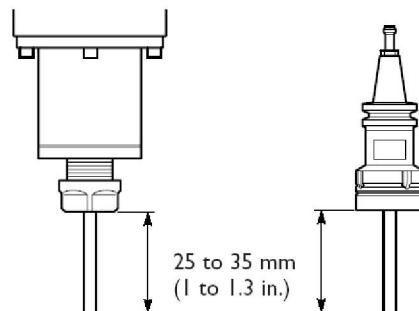
ZCL-540 Setup, Setting Origins

- ✓ Use either Vpanel or Handy panel to move table forward.



- ✓ Install 6mm Origin Detection Pin in spindle.
 - If the machine has an ATC, please load the 6mm pin in the tool holder and install in Stock Location #1.

Standard spindle (ZS-540TY) ATC unit installed



ATC tool loading
procedure on
following page

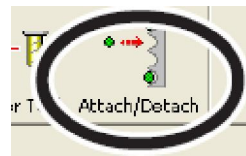
NOTES:

- Please insure that the detection pin is out about 1 to 1.3 inches (25 to 35mm).

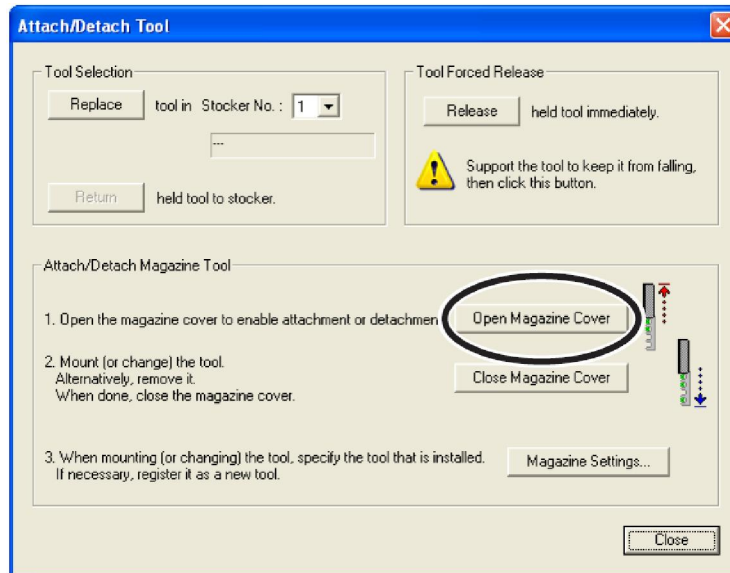


ATC Tool Loading

- ✓ Installing tools in the automatic tool changer.
- Go to the VPanel and click on the Attach/Detach button.



- In the Attach/Detach screen, click on the Open Magazine Cover button to open the magazine cover.



NOTES:

- If using the Handy Panel, press the MENU key until the ATC TOOL MENU appears.



```
<ATC TOOL MENU>
>TOOL1  RETURN
TOOL2  Mag. cover
TOOL3  Meas. length
TOOL4  Force release
```

[Return to main]

- Move the Handy Panel Jog Wheel until Mag. cover is selected.

> Mag. cover

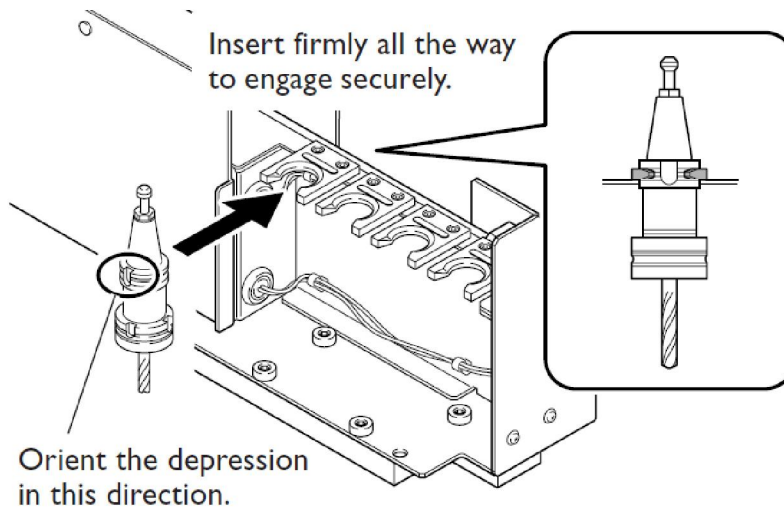
- Press ENTER/PAUSE to open or close the cover.





ATC Tool Loading

- ✓ Installing tools in the automatic tool changer.
 - With the magazine open, place tool holders in the slots.



- With the tool or tools securely in the magazine, click on the Close Magazine Cover button.

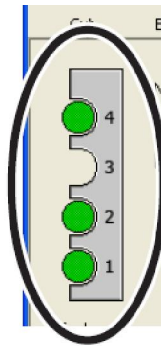


NOTES:

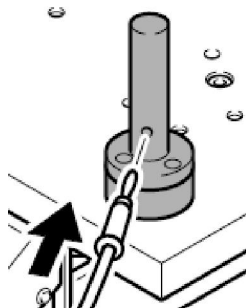


ATC Tool Loading

- The Vpanel will indicate which tool magazine location is holding a tool.



- To measure the length of the tools, click on Magazine, then click Measure all to measure the length of all tools or the Measure button to measure individual tools.
 - Make sure the Z0 sensor cable is connected to the Z0 sensor before starting this process.



NOTES:

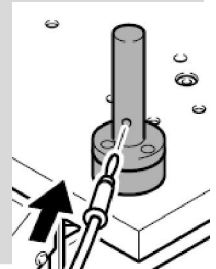
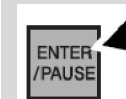
- If using the Handy Panel, press the MENU key until the ATC TOOL MENU appears.

```
<ATC TOOL MENU>
>TOOL1  RETURN
TOOL2   Mag. cover
TOOL3   Meas. length
TOOL4   Force release
[Return to main]
```

- Move the Handy Panel Jog Wheel until Meas. length is selected.

> Meas. length

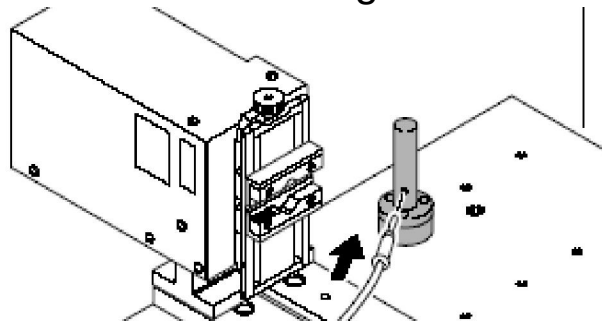
- Pressing Enter will measure the length of all tools available. Make sure the Z0 cable is connected to the Z0 sensor before measuring.





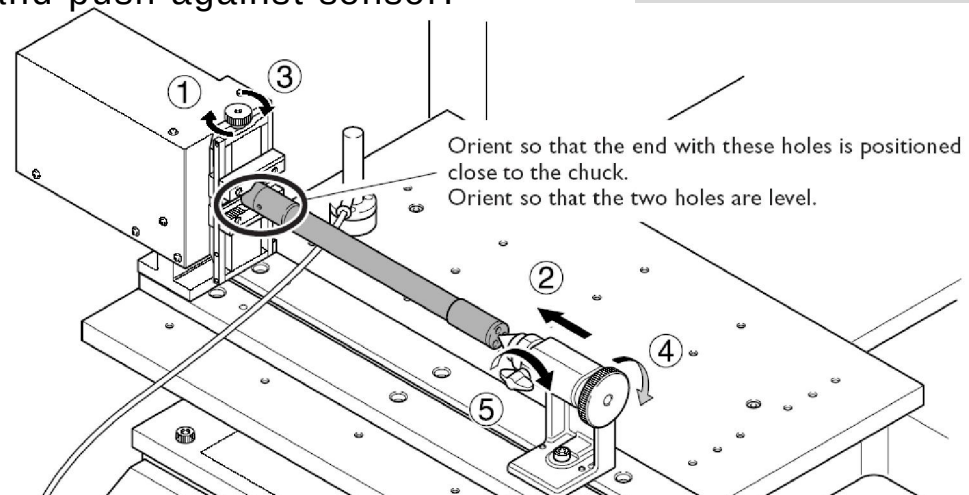
ZCL-540 Setup, Setting Origins

- ✓ Connect sensor cable to Z-Origin Sensor.



- ✓ Install Y-Origin Sensor Bar.

1. Loosely tighten the clamp.
2. Place live center in tailstock and push against sensor.
3. Tighten clamp.
4. Turn livestock clamp $\frac{1}{2}$ turn.
5. Tighten retaining knob.

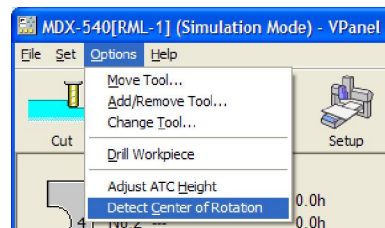


NOTES:

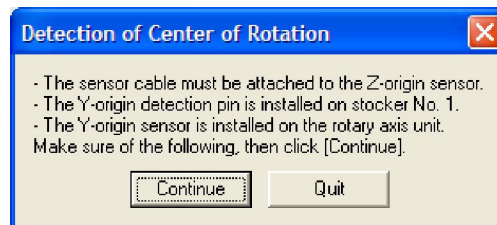


ZCL-540 Setup

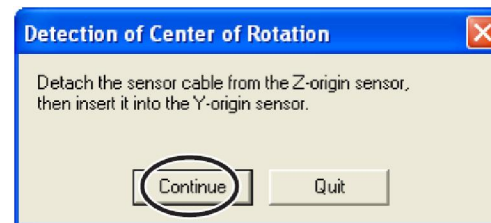
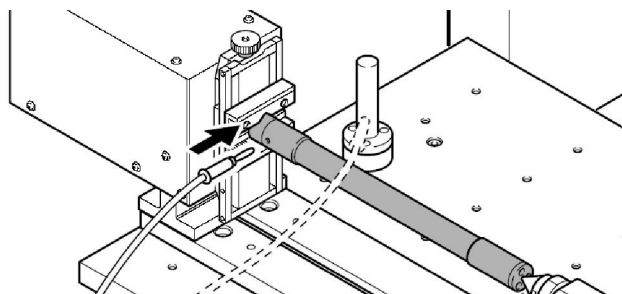
- Go to Vpanel and select “Detect Center of Rotation”.



- Ensure the following and press “Continue” to start process.



- When instructed to do so, remove cable from Z-Origin sensor and insert in Y-Origin sensor then press “Continue”.



NOTES:

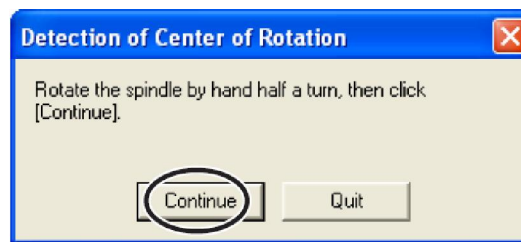
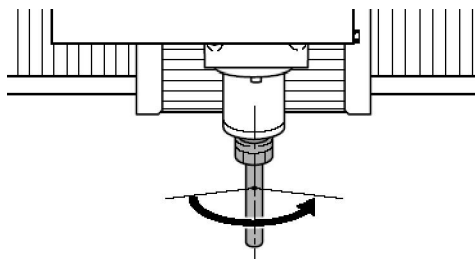
- The pin will be measured using the Z origin sensor.

- During the detection process, the pin will make contact with the sensor bar in several different locations including the thin and thick sections of the bar.

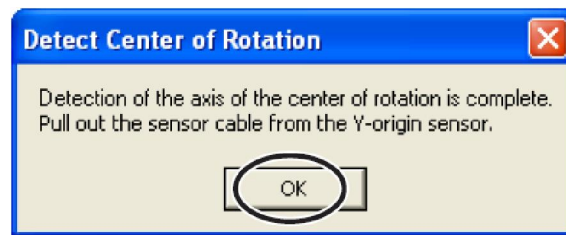


ZCL-540 Setup

- ✓ When instructed to rotate the spindle by half a turn, turn the tool by half a rotation then press “Continue”.



- ✓ When completed, remove the sensor cable and Y-Origin sensor and press “OK”.



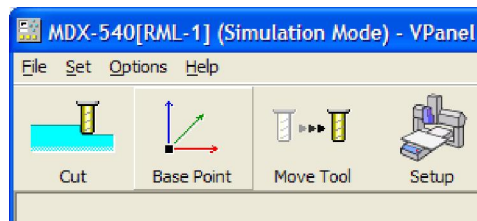
- ✓ Although it appears as if we have finished, there are two critical steps left. Not completing the next two items will cause the rotary axis to cut incorrectly.

NOTES:

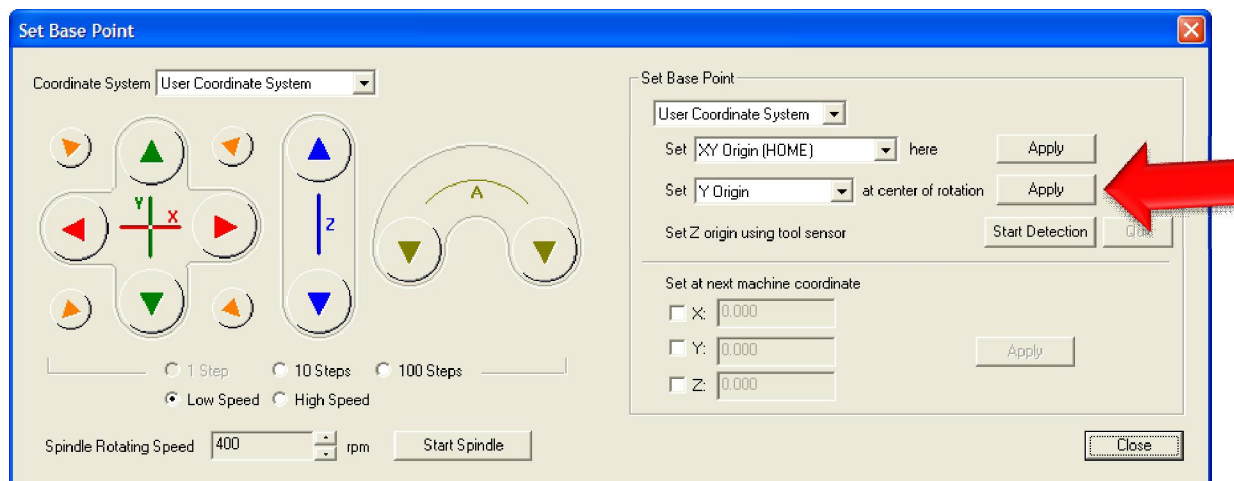


ZCL-540 Setting Y-Axis Origin

- ✓ To complete setting the Y-Axis origin, click on “Base Point”.



- ✓ Click on Set Y Origin at center of rotation “Apply” button.
 - This will set the Y-Origin to the position scanned by the previous steps.

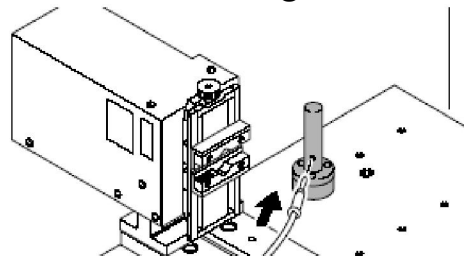


NOTES:

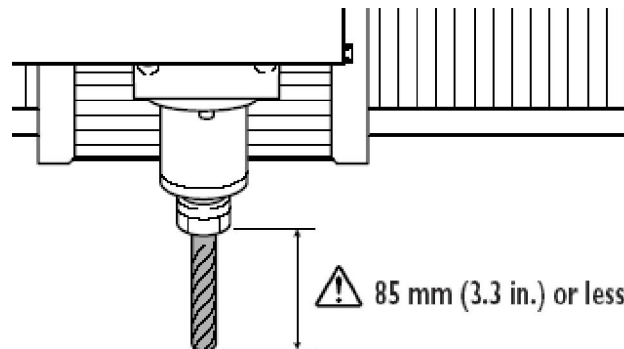


ZCL-540 Setting Z-Axis Origin

- ✓ Connect sensor cable to Z-Origin sensor.



- ✓ If you have an Automatic Tool Changer (ATC), install at least one tool, and measure the length of the tool.
- ✓ Install a tool in the spindle or if you have an ATC unit, pick up a tool whose length has been measured.



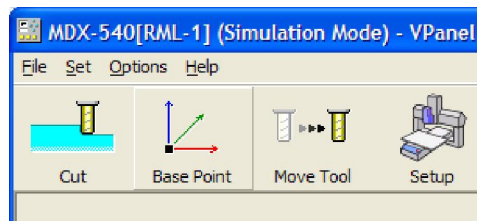
NOTES:

- Failing to measure the length of the tool or performing this step will cause the machine to cut too deep in the material or not cut the material at all.

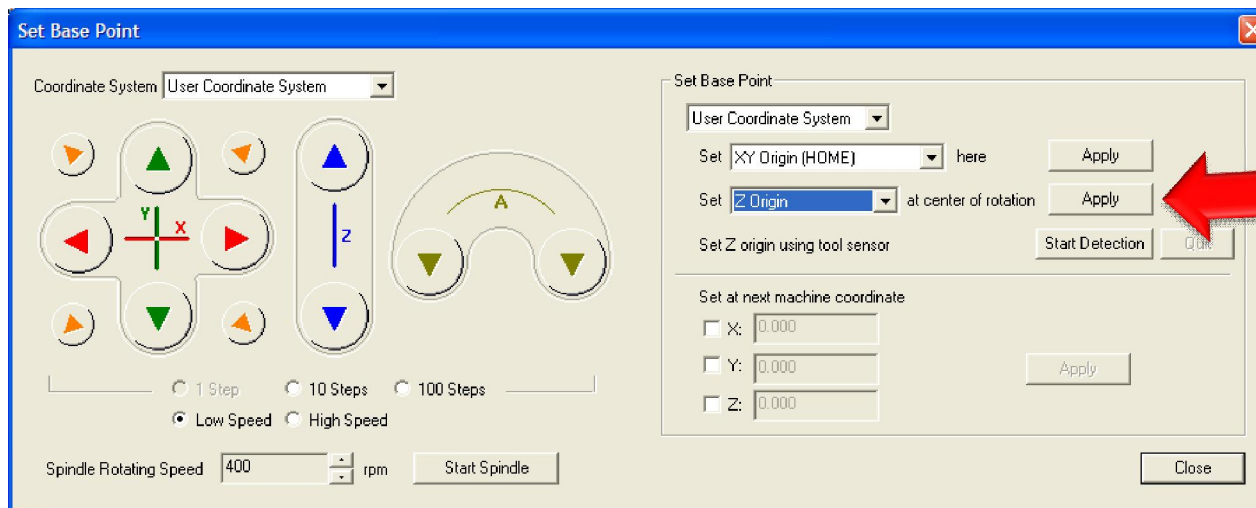


ZCL-540 Setting Z-Axis Origin

- ✓ Click on “Base Point” within the VPanel.



- ✓ Click on Set Z Origin at center of rotation “Apply” button.



NOTES:



ZCL-540 Setting Z-Axis Origin

- ✓ After the machine has finished measuring the length of the tool disconnect the sensor cable and click "OK".

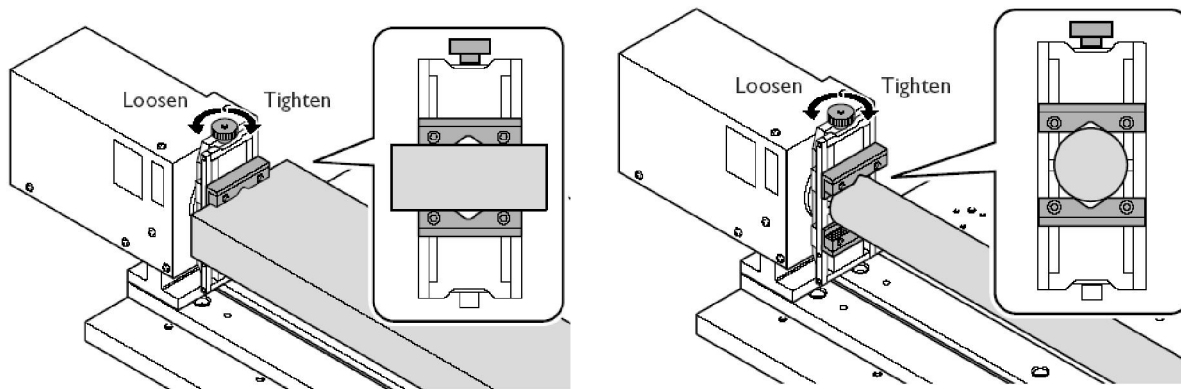


NOTES:



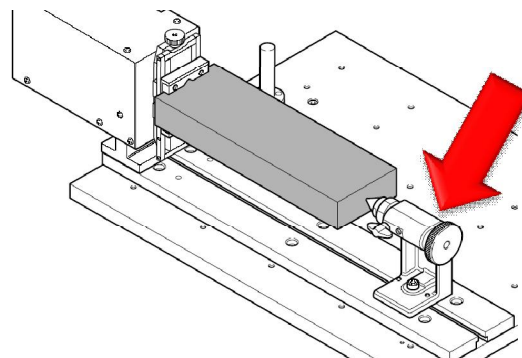
ZCL-540 Operation

- ✓ The rotary axis clamp can hold both square material and round material.



NOTES:

- ✓ The Tailstock will be used to support the material during cutting. It will be used with the center drill and live center.

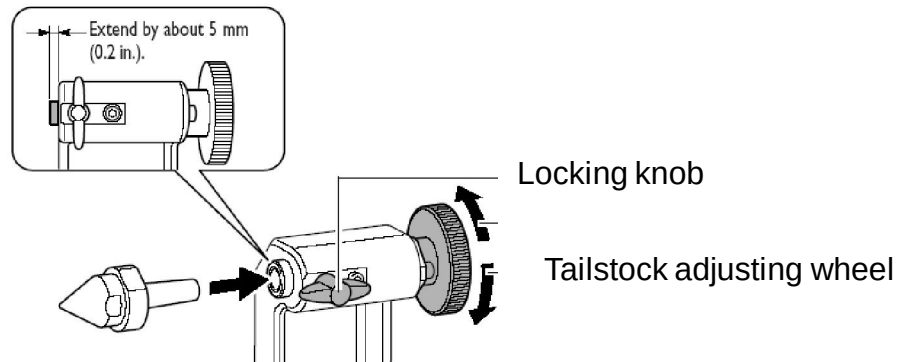




ZCL-540 Operation

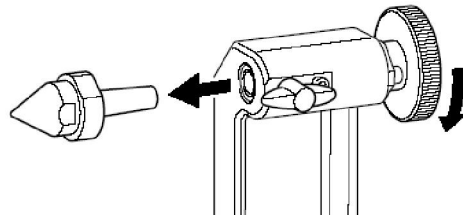
✓ Installing Live Center and/or Center Drill.

- First extend the tailstock about 0.2 inch (5mm).
- Next insert either the live center or center drill.
- Extend the tailstock holder by turning the adjusting wheel.
- Turn knob to lock in place.



✓ Removing Center Drill or Center Drill.

- Remove live center or center drill by retracting the tailstock.



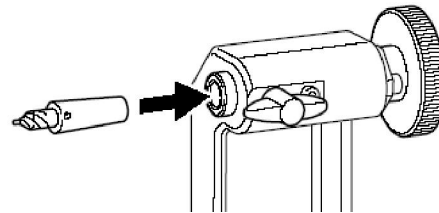
NOTES:



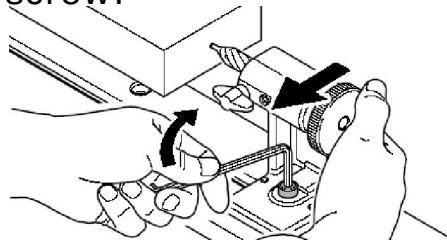
ZCL-540 Operation

✓ Drilling Center Hole on Material.

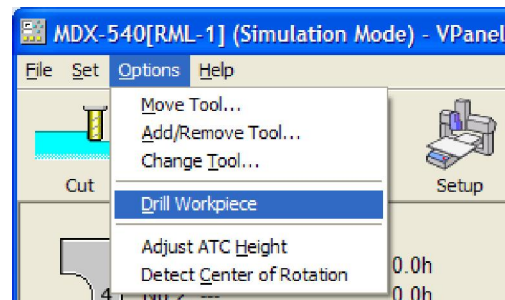
- Attach center drill.



- Slide tailstock and drill until drill touches the material.
- Tighten retaining screw.



- In the Vpanel, select "Drill Workpiece".



NOTES:

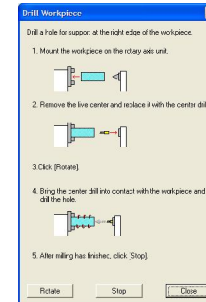
- The center hole is a small hole or notch on the end of the material for the live center to hold the material in place.



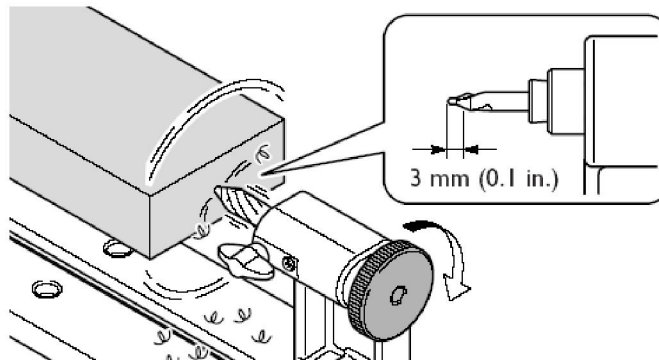
ZCL-540 Operation

- The Drill Workpiece window will open.
- Click on “Rotate” to start rotating the material.

Rotate



- Slowly turn the adjusting dial to cut a hole 0.1 in (3mm) deep.



- Once completed, click on “Stop” then “Close”.



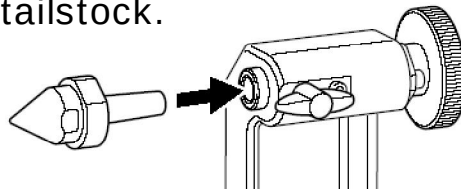
NOTES:



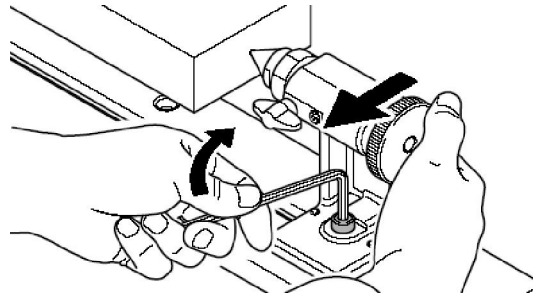
ZCL-540 Operation

✓ Live Center Installation

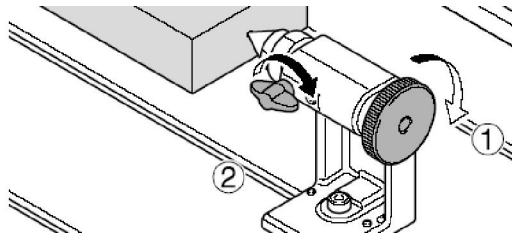
- Install live center to tailstock.



- Slide tailstock and live center until the live center goes in the center hole previously cut in material.
- Tighten retaining screw.

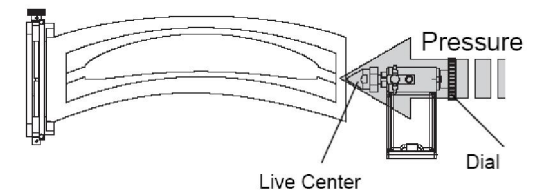


1. Rotate dial half a turn.
2. Tighten knob to secure material.



NOTES:

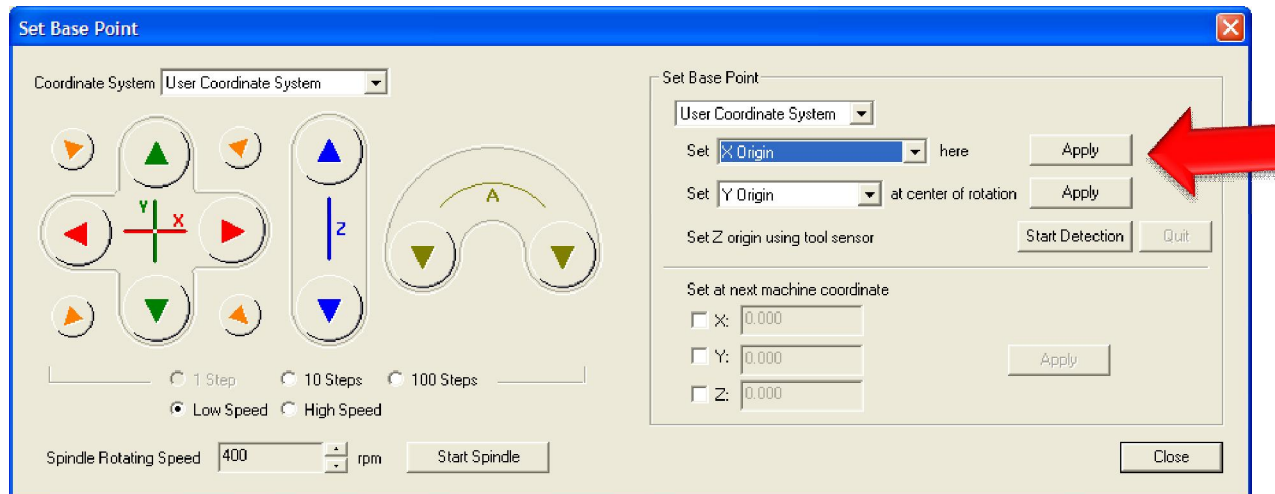
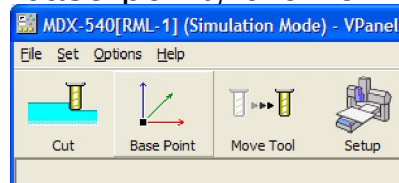
- Be careful not to over tighten the adjusting dial.
- Over tightening could cause the material to warp causing inconsistent cutting.





ZCL-540 Operation

- ✓ The MDX-540 and ZCL-540 unit are now ready.
- ✓ **Please note that you only need to set the X-Origin before starting your program. The Z-Origin and Y-Origin have been set. Set only the X-Origin.**
 - To set the origin, move the tool left or right to the desired location and under base point, click on the Set X-Origin here “Apply” button.

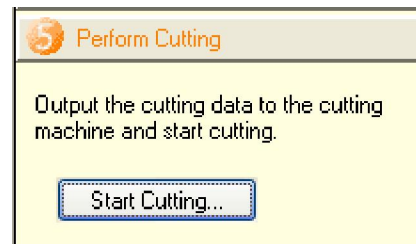


NOTES:

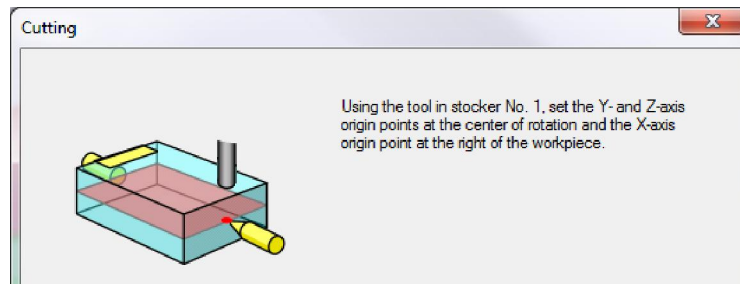


ZCL-540

- ✓ The MDX-540 & ZCL-540 are now ready to receive commands from software program.
 - Press “Start Cutting” in SRP Player to start machine.



- When the software asks you to set the origin points, the Y and Z axis have already been set.
 - You only need to set the X origin on the right edge of the material as noted below.



NOTES: